

**Performance Analysis  
of  
Price Anderson Amendment Act (PAAA) and  
Occurrence Reporting and Processing System (ORPS)  
Reportable Incidents  
(January 1 through December 31, 2006)**

**Report No. 13**

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## EXECUTIVE SUMMARY

This analysis report addresses Price Anderson Amendment Act (PAAA) and Occurrence Reporting Process System (ORPS) reportable incidents that were identified during January 1, 2006 through December 31, 2006. The analysis considers a variety of data, including: Discovery Date, Division, Reporting Criteria, Significance Category, Causal Code, and Integrated Safety Management (ISM) function; and further breaks down and analyzes collections of data points to determine if an adverse trend is developing.

During this reporting period, nineteen incidents were analyzed, five PAAA internally-reportable incidents and fourteen ORPS reportable incidents. Environmental, Health & Safety (26%) and Facilities (26%) contributed to the majority of reportable incidents.

Based on the analysis, it was determined that there is no statistical evidence of recurring events that warrant additional management action or the submission of an ORPS Category 2R report.

During the last reporting period, the number of incidents attributed to reporting criteria "2A(6) Any single occurrence that can lead to a serious occupational injury" was identified as an area requiring monitoring and improvement. There has been no change in the number of incidents attributed to this reporting criteria during this reporting period compared to the last.

## BACKGROUND

As part of its oversight program required by DOE Order 226.1, *Implementation of Department of Energy Oversight Policy*, LBNL identifies operational events, accidents and injuries in order to analyze and trend incidents to determine areas of needed improvement and to ensure the effectiveness of corrective actions to mitigate events and identify recurring events.

The ORPS performance analysis is part of the quarterly analysis and trending requirement mandated by DOE Order 231.1A, *Environment, Safety and Health Reporting*.

## ANALYSIS

During this reporting period, PAAA- and ORPS-reportable incidents decreased by 21% from the previous reporting period. Additionally, the number of PAAA reportable incidents identified during this reporting period decreased 25%, and the number of ORPS-reportable incidents decreased 20% compared to last reporting period.

Where incidents are required to be reported to more than one agency, they are counted as only one incident. For example, an incident that is PAAA and ORPS reportable is considered only one incident even though it was required to be reported to two agencies.

Raw data for all events is identified on Attachment 1.

Categories where more than five data points existed were reviewed and analyzed to determine the development of an adverse trend or recurrence of events indicating ineffective corrective actions. The categories where more than five data points occurred during this reporting period are outlined below with the raw data for these categories found on Attachment 2:

### Division:

- Facilities (6)

### Reporting Criteria:

- 2A(6) - Any single occurrence resulting in a serious occupational injury (5)

## CONCLUSION

Based on the analysis performed, it was determined that there is no systemic problem identified with LBNL activities and operations and no adverse trends exist in the areas evaluated. With regard to the categories where more than five data points existed, it was determined that there are variations in event details, discovery dates, significance categories and cause codes and that no correlation exists between the data. Corrective actions have been developed and implemented to address these issues. No additional management action is required for these events.

While no change was identified with regard to events attributed to Reporting Criteria "2A(6) Any single occurrence that can lead to a serious occupational injury", management will need to continue to monitor these types of incidents. At the end of the next quarter, enough data should be acquired to determine if an adverse trend is forming.

### Attachment 1 – PAAA and ORPS Reportable Incidents Raw Data

Discovery Date	ORPS/PAAA Reference #	Subject/Title of Occurrence	Division	Bldg/ Location	Reporting criteria (Group-[ORPS reportable only])	Significance Category	Cause Code, if applicable Human Performance Code Couplet, if applicable	ISM Function, if applicable
1/11/06	SC-BSO-LBL-EHS-2006-0001  PAAA-20006-01	Loss of Accountability/Control of Radioactive Material	Environment, Health & Safety	Bldg 71	6A(3) - Loss of radioactive material which exceeds 1 times and no greater than 100 times the quantities specified in 10 CFR Part 835	Category 3	A3B3C05 - Incorrect assumption that a correlation exists between two or more facts	5) Provide Feedback and Continuous Improvement
1/12/06	SC-BSO-LBL-AFRD-2006-0001	Unexpected discovery of electrical current from heater	Accelerator & Fusion Research Div.	Bldg 58	2C(2) - Failure to follow a prescribed hazardous energy control process	Category 3	A2B6C01 - Defective or failed par	3) Develop/Implement Hazard Controls
1/13/06	SC-BSO-LBL-OPERATIONS-2006-0001	Forklift Operator Trips on Forklift Tines, Suffers Broken Wrist	Facilities	Bldg 903	2A(6) - Any single occurrence resulting in a serious occupational injury	Category 3	A3B1C03 - Incorrect performance due to mental lapse	4) Perform Work Within Controls
2/28/06	SC-BSO-LBL-OPERATIONS-2006-0002	Finger Injury Suffered During Truck Lift Gate Operations	Facilities	LBNL	2A(6) - Any single occurrence resulting in a serious occupational injury	Category 3	A3B1C03 Incorrect performance due to mental lapse A2B4C07 Marking/labeling LTA	3) Develop/Implement Hazard Controls
3/7/06	SC-BSO-LBL-OPERATIONS-2006-0003	Improperly described hazardous waste transported onsite	Facilities	Bldg 76	8(3) - Any onsite transport of hazardous material	Category 4	N/A	4) Perform Work Within Controls
3/15/06	SC-BSO-LBL-EHS-2006-0002	Class II Violations of RCRA Part B	Environment, Health & Safety	Bldg 85	9(2) - Any written notification from an outside regulatory agency	Category 4	N/A	4) Perform Work Within Controls
3/29/06	SC-BSO-LBL-ALS-2006-0001	Recurring Deficiencies in ALS Implementation of LBNL Radiation Protection Program	Advanced Light Source	Bldg 6	10(2) - An event, condition, or series of events that does not meet any of the other reporting criteria	Category 2	A4B3C08 - Management Problem; Work Organization & Planning LTA A4B1C01 - Management Problem; Management Methods Less Than Adequate (LTA)	1) Define the Scope of Work 2) Analyze the Hazards 3) Develop and Implement Hazard Controls 4) Perform Work Within Controls 5) Provide Feedback and Continuous Improvement
5/22/06	PAAA-2006-002	Potter RWA violations (2) for P-32 mishandling	Life Sciences	Bldg 977	Spread of contamination	Non-ORPS Reportable	A4B1C03 – Management direction created insufficient awareness of impact of action on safety/reliability	4) Perform Work Within Controls

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5/22/06	PAAA-2006-003	Cf-249 legacy source/contamination at B88 roof area	Nuclear Sciences	Bldg 88	Legacy contamination	Non-ORPS Reportable	A7B2C01 – Legacy contamination	N/A
6/6/06	SCO-BSO-LBL-ENG-2006-0001	Potential heater Tape Electrical Shorting	Engineering	Bldg 58A	10(3) A near miss	Category 3	A3B3C06 – Human Performance Less Than Adequate	2) Analyze the Hazards
6/28/06	SC-BSO-LBL-ENG-2006-0002	Management Concern from Fall in Bldg 58A	Engineering	Bldg 58A	10(2) An event, condition, or series of events that does not meet any of the other reporting criteria	Category 3	A1B4C01- Acceptance of design/installation LTA A4B1C04 – Mgmt follow-up or monitoring of activities did not identify problems A4B4C06 – Job performance and self-checking standards not properly communicated	2) Analyze the Hazards
7/24/06	SC-BSO-LBL-CRD-2006-0001	Trip injury/fracture of foot bone from loss of balance	Computational Research	Off-site, Out of US	2A(6)Single occurrence/ serious occupational injury	Category 3	A1B5C02 – Design/Engineering Problem	N/A
7/24/06	SC-BSO-LBL Operations-2006-0006	Misidentified source of electrical power during precautionary investigation and core drilling	Facilities	Bldg 6	2C(2)Failure to follow a prescribed hazardous energy control process	Category 3	A4B1C01 – Management Problem/Management Methods LTA	1) Define the Scope of Work
8/4/06	SC-BSO-LBL-ICSD-2006-0001	Employee slips on stairs, breaks arm	Information & Computing Sciences	Bldg 50E	2A(6)Single occurrence/ serious occupational injury	Category 3	A2B6C04 – Equipment/Material Problem	2) Analyze the Hazards
8/16/06	PAAA-2006-004	C-14 legacy contamination at B55A	Environmental, Safety & Health	B55A	Legacy Contamination	Non-ORPS reportable	A7B2C01 – Legacy Contamination	2) Analyze the Hazards
9/5/06	SC-BSO-LBL-Operations-2006-2004	B55A LOTO violation	Environmental, Safety & Health	B55A	2C(2)Failure to follow a prescribed hazardous energy control process	Category 3	A5B2C07 – Communications LTA A4B3C06 – Management Problem A4B3C09 – Management Problem	3) Develop/Implement Hazard Controls
9/15/06	SC-BSO-LBL-Operations-2006-0005	Employee breaks elbow at Bldg 66	Facilities	Bldg 66	2A(6)Single occurrence/ serious occupational injury	Category 3	A1B5C02 – Design/Engineering Problem	3) Develop/Implement Hazard Controls

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Discovery Date	ORPS/PAAA Reference #	Subject/Title of Occurrence	Division	Bldg/ Location	Reporting criteria (Group-[ORPS reportable only])	Significance Category	Cause Code, if applicable Human Performance Code Couplet, if applicable	ISM Function, if applicable
11/2/06	PAAA-2006-005	Failure of staff to complete GERT training Exam	Environmental, Safety & Health	Site Wide	Management Concern	Non-ORPS Reportable	N/A	N/A
11/7/06	PAAA-2006-006	Discrepancy between electronic data log and documented beamline condition	Advanced Light Source	Bldg 6	Management Concern	Non-ORPS Reportable	A5B1C03 – Checklist LTA	N/A

**Attachment 2 – LBNL Performance Analysis of PAAA and ORPS Reportable Incidents  
January 1, 2006 through December 31, 2006**

**Multiple Contributor: DIVISION – Facilities**

Discovery Date	ORPS/PAAA Reference #	Subject/Title of Occurrence	Division	Building/ Location	Reporting criteria (Group-[ORPS reportable only])	Significance Category	Cause Code, if applicable Human Performance Code Couplet, if applicable	ISM Function, if applicable
1/13/06	SC-BSO-LBL-OPERATIONS-2006-0001	Forklift Operator Trips on Forklift Tines, Suffers Broken Wrist	Facilities	Bldg 903	2A(6) - Any single occurrence resulting in a serious occupational injury	Category 3	A3B1C03 - Incorrect performance due to mental lapse	4) Perform Work Within Controls
2/28/06	SC-BSO-LBL-OPERATIONS-2006-0002	Finger Injury Suffered During Truck Lift Gate Operations	Facilities	LBNL Grounds	2A(6) - Any single occurrence resulting in a serious occupational injury	Category 3	A3B1C03 Incorrect performance due to mental lapse A2B4C07 Marking/labeling LTA	3) Develop/Implement Hazard Controls
3/7/06	SC-BSO-LBL-OPERATIONS-2006-0003	Improperly described hazardous waste transported onsite	Facilities	Bldg 76	8(3) - Any onsite transport of hazardous material	Category 4	N/A	4) Perform Work Within Controls
7/24/06	SC-BSO-LBL Operations-2006-0006	Misidentified source of electrical power during precautionary investigation and core drilling	Facilities	Bldg 6	2C(2) - Failure to follow a prescribed hazardous energy control process	Category 3	A4B1C01 – Management Problem/Management Methods LTA	1) Define the Scope of Work
9/5/06	SC-BSO-LBL-Operations-2006-2004	B55A LOTO violation	Facilities	B55A	2C(2) Failure to follow a prescribed hazardous energy control process	Category 3	A5B2C07 – Communications LTA A4B3C06 – Management Problem A4B3C09 – Management Problem	3) Develop/Implement Hazard Controls
9/15/06	SC-BSO-LBL-Operations-2006-0005	Employee breaks elbow at Bldg 66	Facilities	Bldg 66	2A(6) - Any single occurrence/ serious occupational injury	Category 3	A1B5C02 – Design/Engineering Problem	3) Develop/Implement Hazard Controls

**Analysis:** The same six incidents were identified for Facilities this reporting period compared to the last reporting period. This reporting period, Facilities contributed to 32% of all ORPS and PAAA reportable incidents for this reporting period. Review of the data suggests that all incidents were evenly distributed across the last twelve months and differ with regard to Reporting Criteria, Significance Category, Cause Code and ISM Function, indicating that no adverse trend is developing and recurrence of issues is not taking place.

**Attachment 2 – LBNL Performance Analysis of PAAA and ORPS Reportable Incidents  
January 1, 2006 through December 31, 2006**

**Multiple Contributor: REPORTING CRITERIA 2A(6) - Any single occurrence resulting in a serious occupational injury**

Discovery Date	ORPS/PAAA Reference #	Subject/Title of Occurrence	Division	Building/ Location	Reporting criteria (Group-[ORPS reportable only])	Significance Category	Cause Code, if applicable Human Performance Code Couplet, if applicable	ISM Function, if applicable
1/13/06	SC-BSO-LBL-OPERATIONS-2006-0001	Forklift Operator Trips on Forklift Tines, Suffers Broken Wrist	Facilities	Bldg 903	2A(6) - Any single occurrence resulting in a serious occupational injury	Category 3	A3B1C03 - Incorrect performance due to mental lapse	4) Perform Work Within Controls
2/28/06	SC-BSO-LBL-OPERATIONS-2006-0002	Finger Injury Suffered During Truck Lift Gate Operations	Facilities	LBNL	2A(6) - Any single occurrence resulting in a serious occupational injury	Category 3	A3B1C03 Incorrect performance due to mental lapse A2B4C07 Marking/labeling LTA	3) Develop/Implement Hazard Controls
8/4/06	SC-BSO-LBL-ICSD-2006-0001	Employee slips on stairs, breaks arm	Information & Computing Sciences	Bldg 50E	2A(6)Single occurrence/ serious occupational injury	Category 3	A2B6C04 – Equipment/Material Problem	2) Analyze the Hazards
9/15/06	SC-BSO-LBL-Operations-2006-0005	Employee breaks elbow at Bldg 66	Facilities	Bldg 66	2A(6)Single occurrence/ serious occupational injury	Category 3	A1B5C02 – Design/Engineering Problem	3) Develop/Implement Hazard Controls
7/24/06	SC-BSO-LBL-CRD-2006-0001	Trip injury/fracture of foot bone from loss of balance	Computational Research	Off-site, Out of US	2A(6)Single occurrence/ serious occupational injury	Category 3	A1B5C02 – Design/Engineering Problem	N/A

**Analysis:** There was no change in the number of incidents (5) attributed to Reporting Criteria “Any single occurrence resulting in a serious occupational injury” identified during the previous reporting are the same for this reporting period. These incidents were contributed to by a variety of Divisions including Chemical Sciences, Computational Research, Facilities and Information & Computing Sciences. While each of these incidents was also identified as Significance Category 3, there is no correlation between these two variables. These incidents, which were evenly distributed over the last twelve months, resulted in a number of broken bones and superglue in eyes. Corrective actions for these incidents needs to be monitored to ensure the effectiveness of the corrective actions taken and identify recurrence of similar occupational injuries.